F I G. 1

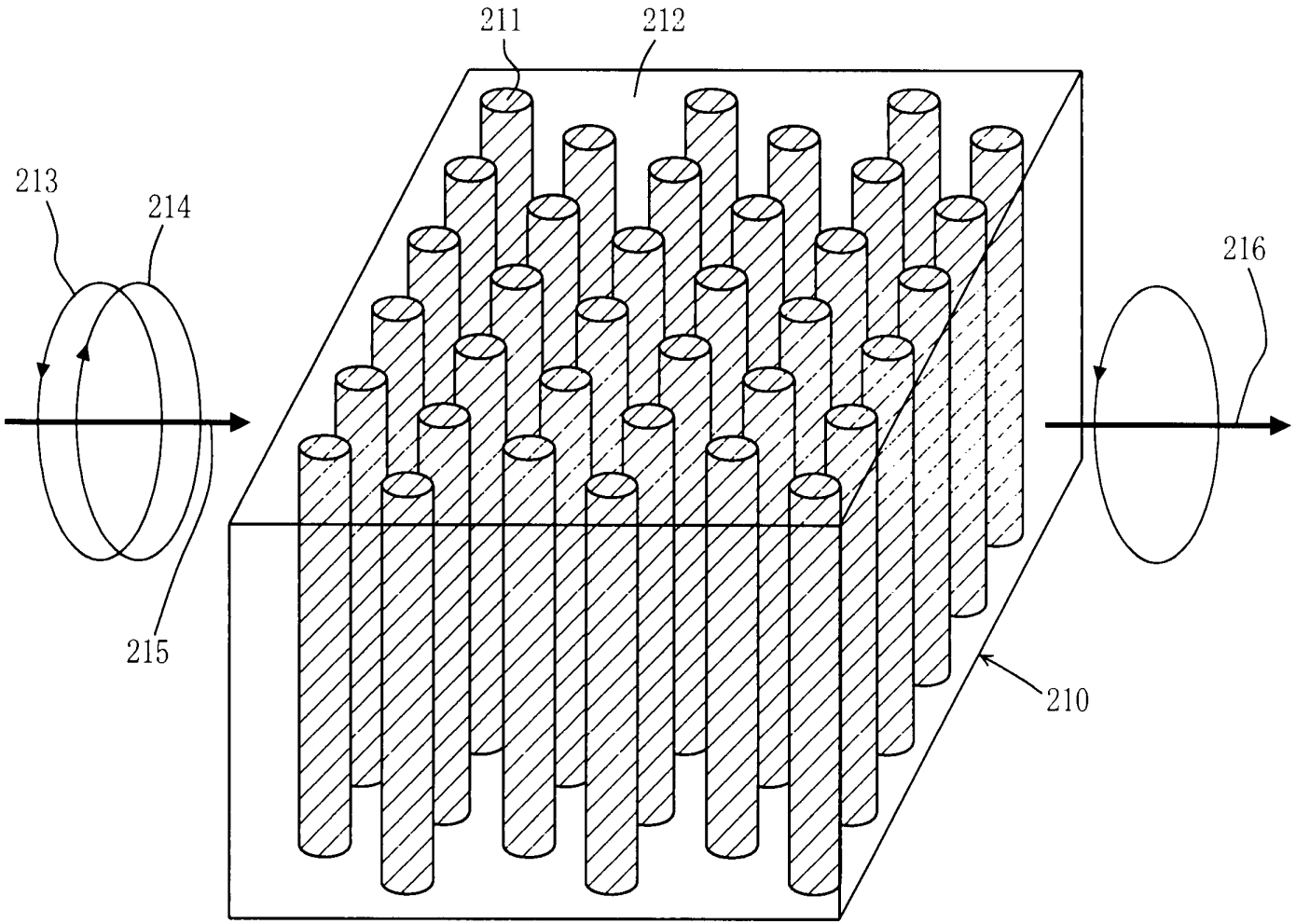

FIG. 2

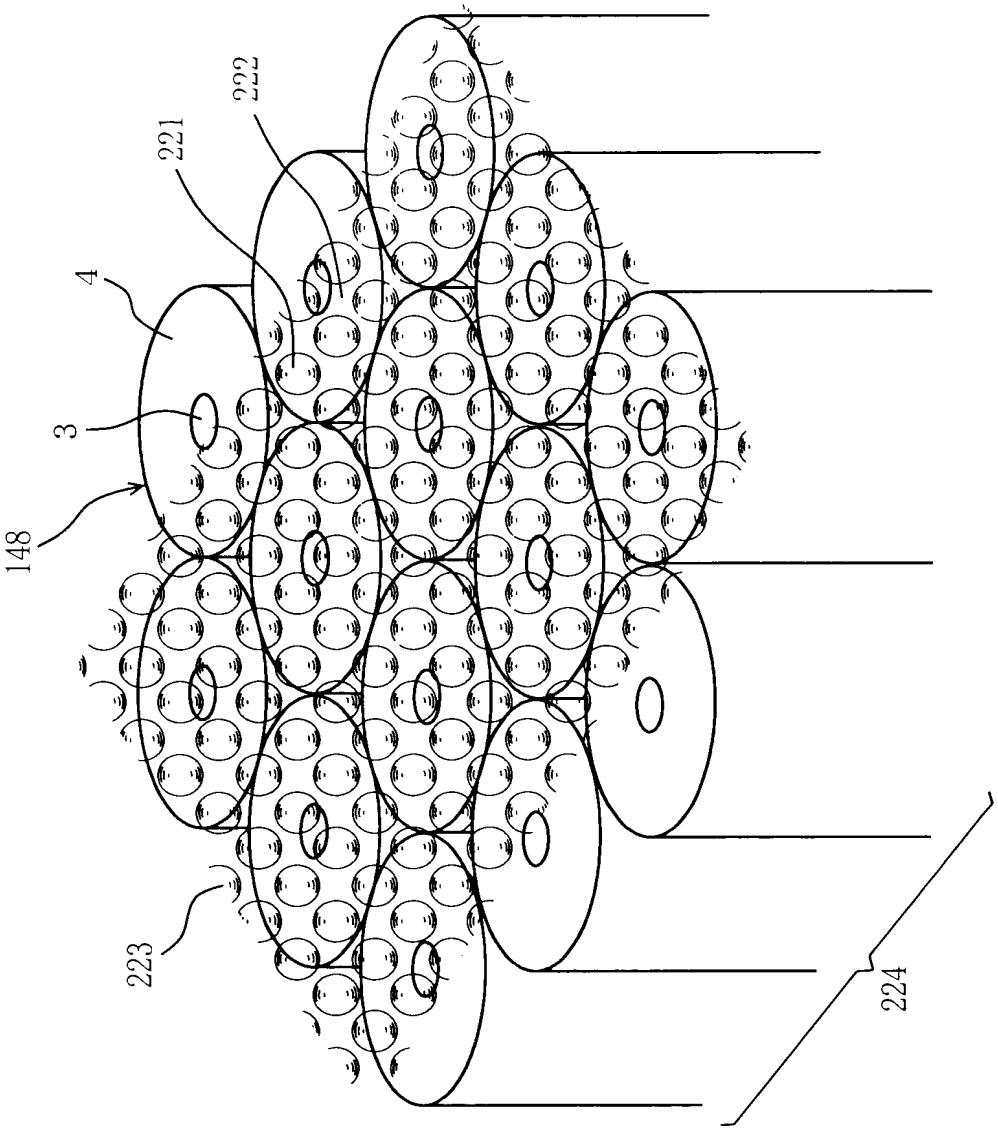

FIG. 3

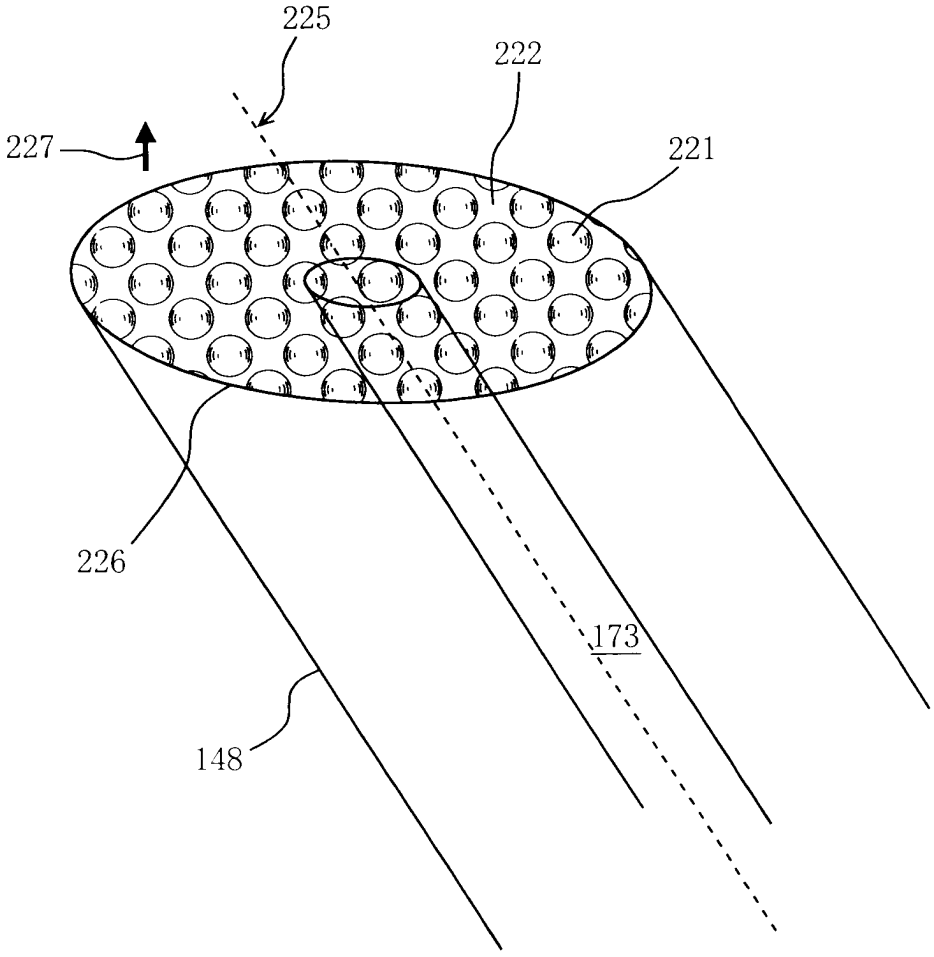

FIG. 4

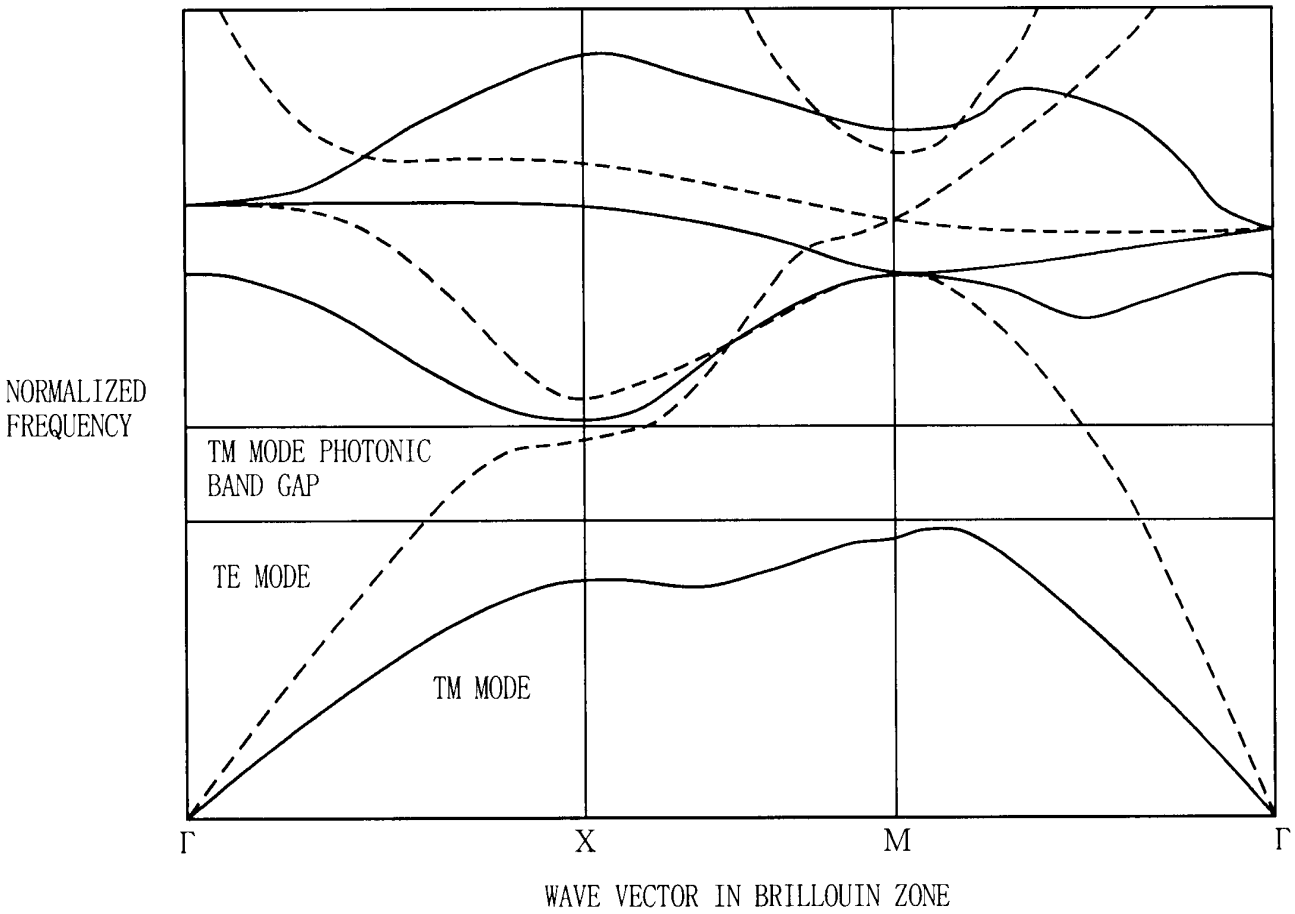
NORMALIZED
FREQUENCY
TM MODE PHOTONIC
BAND GAP
TE MODE
TM MODE
Γ
X
M
Γ
WAVE VECTOR IN BRILLOUIN ZONE

FIG. 5A

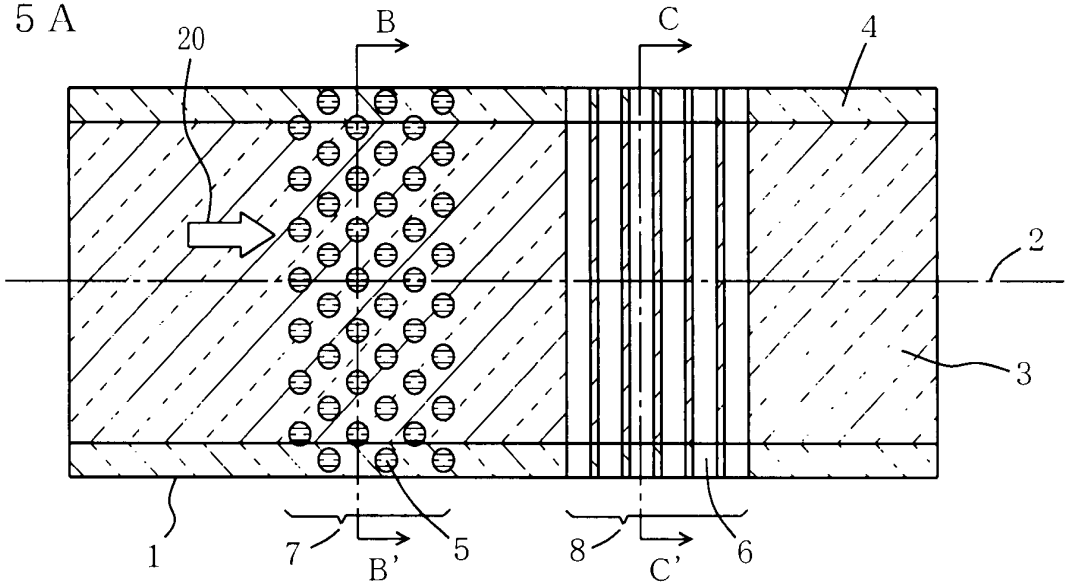

FIG. 5B

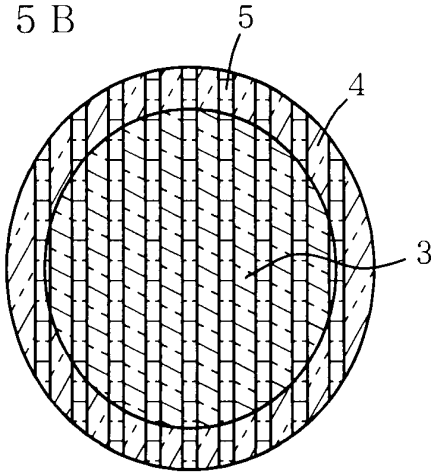

FIG. 5C

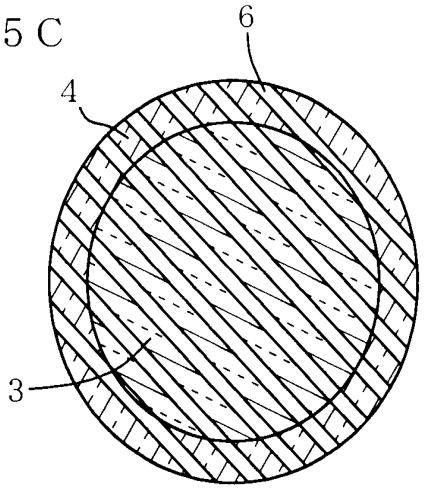

FIG. 6

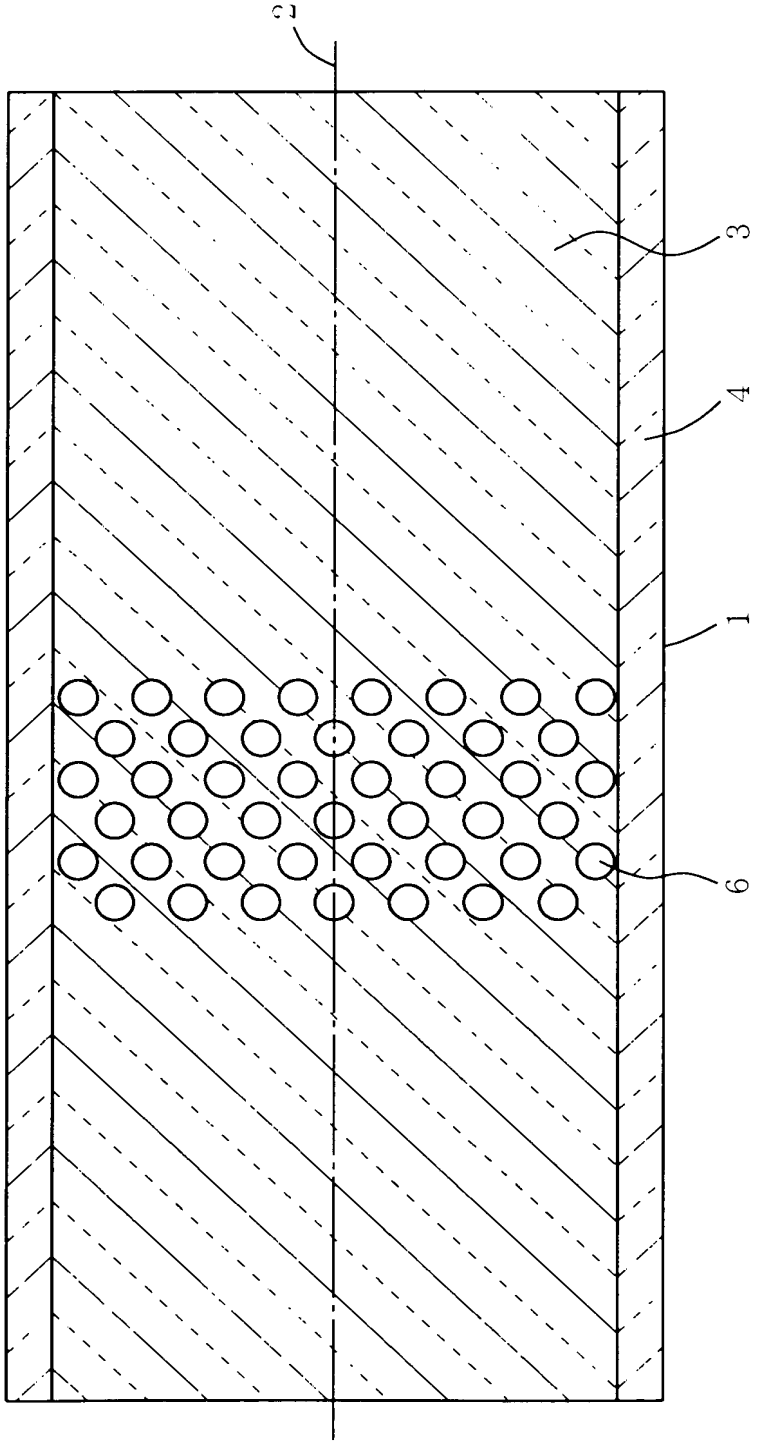

FIG. 7A

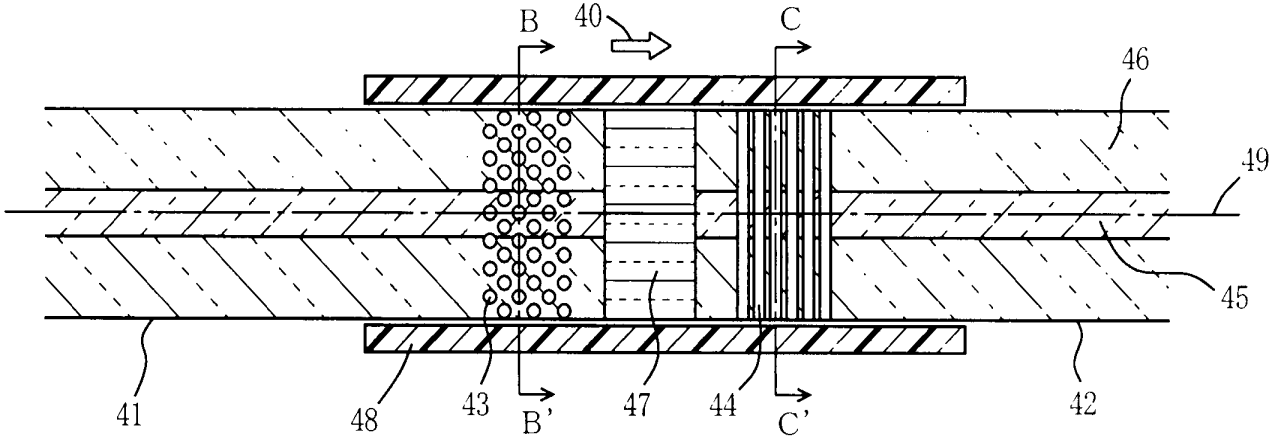

FIG. 7B

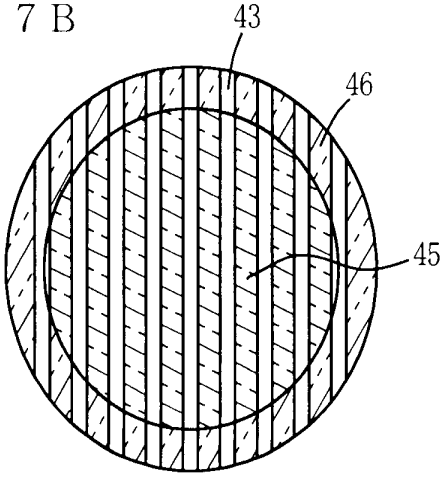

FIG. 7C

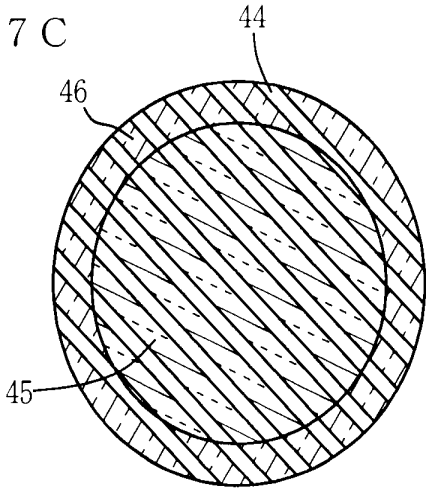

FIG. 8

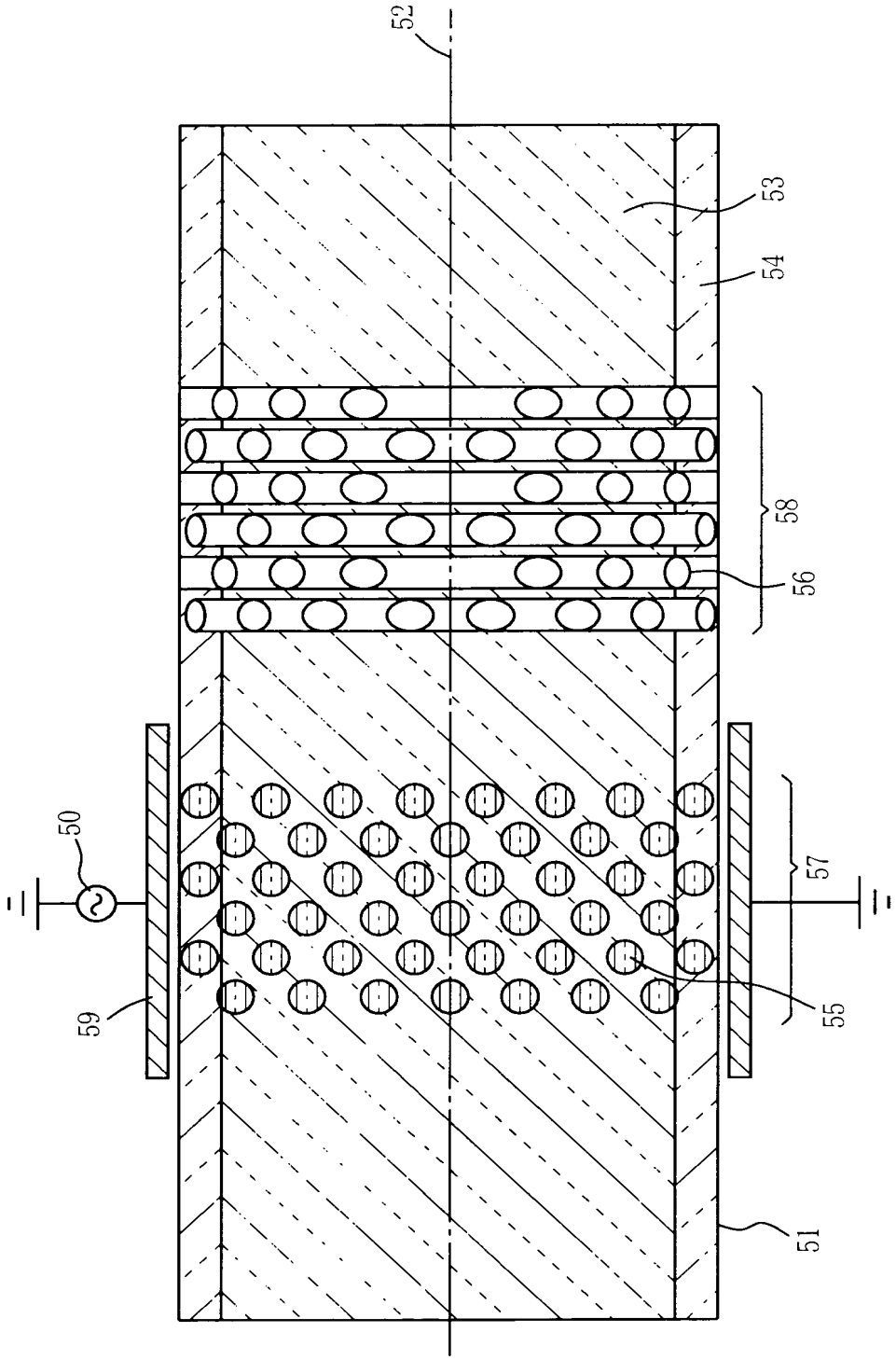

FIG. 9

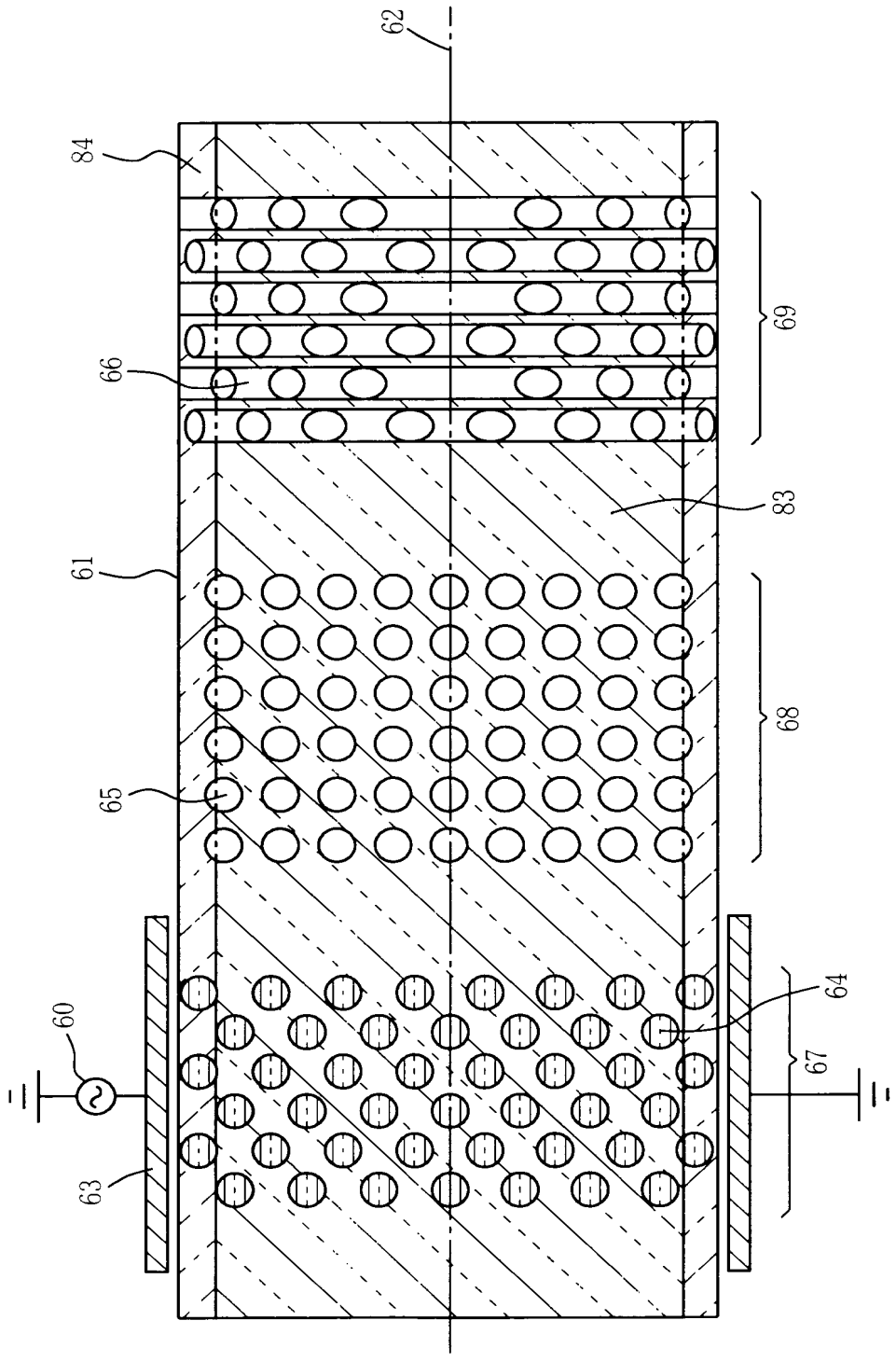

FIG. 10

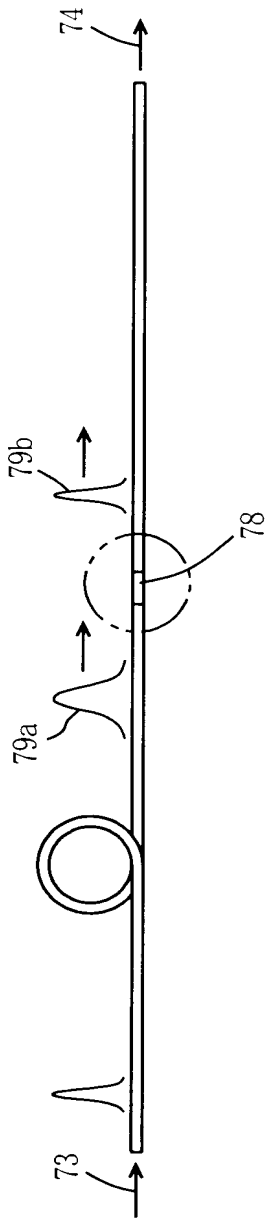

FIG. 11

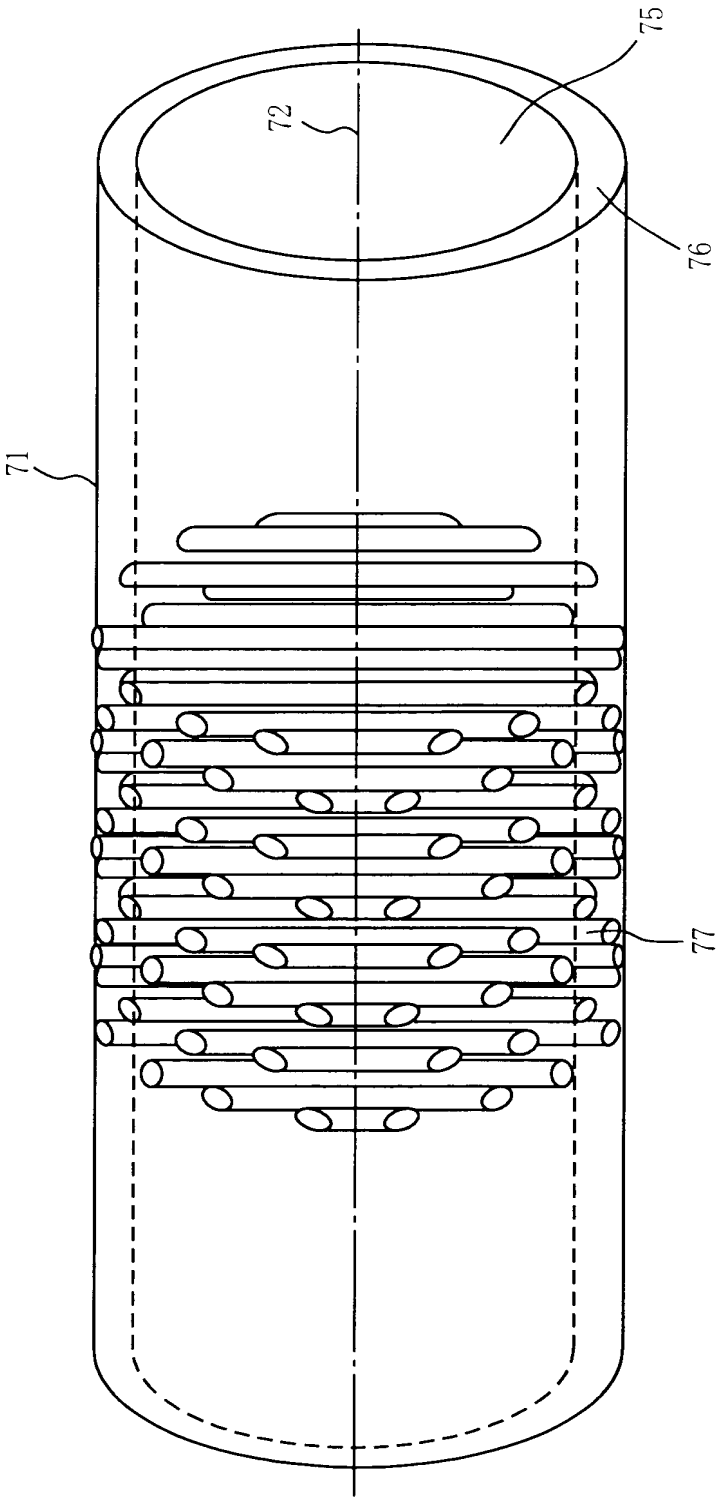

FIG. 12

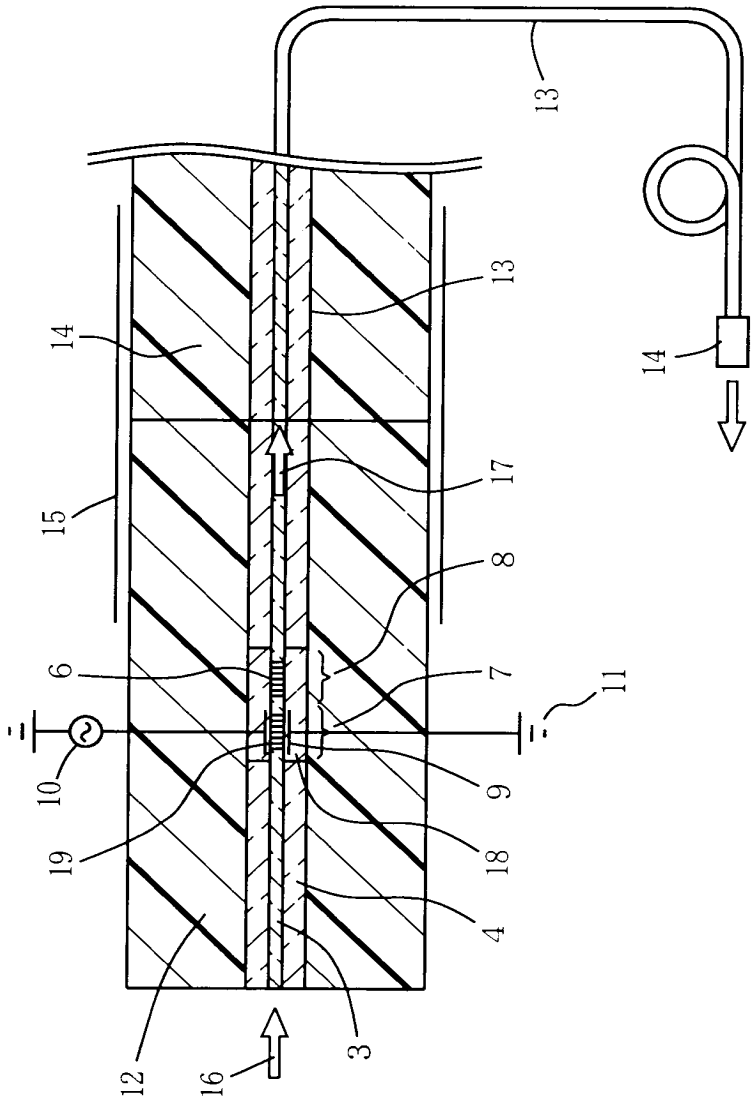

FIG. 13B

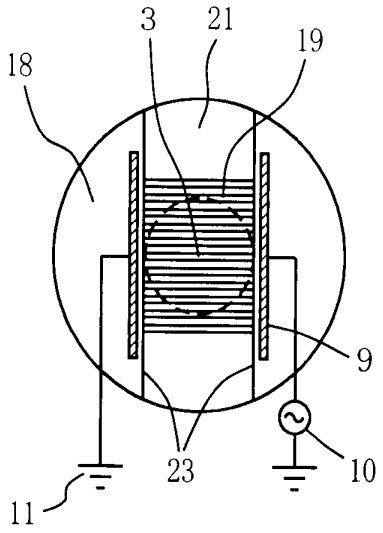

FIG. 13A

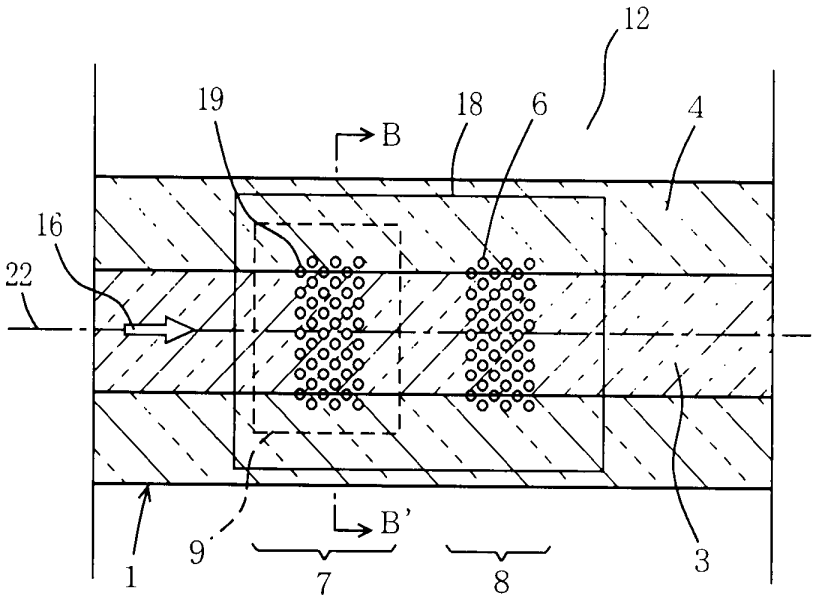

FIG. 14B

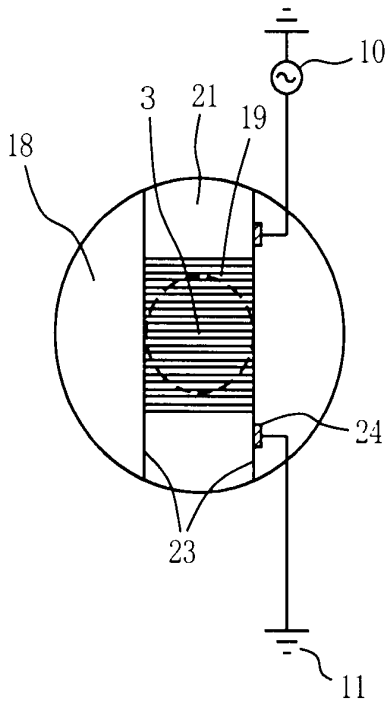

FIG. 14A

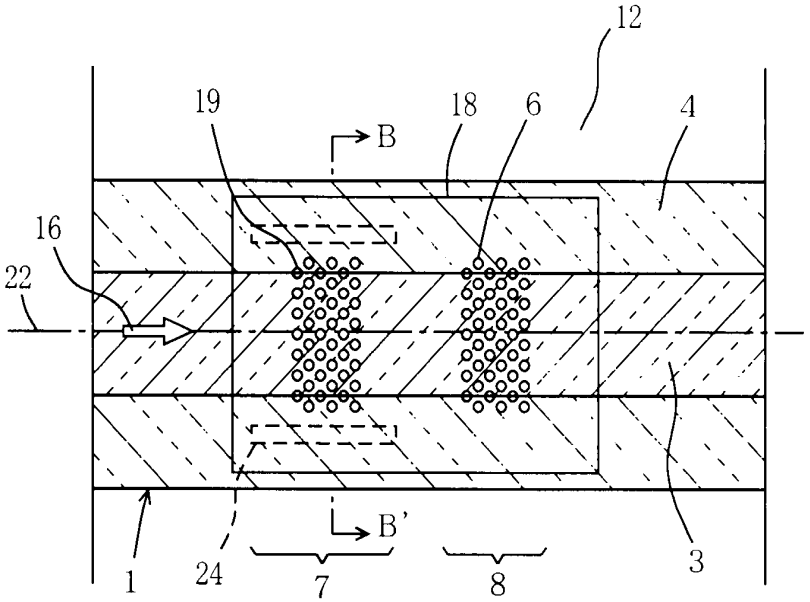

FIG. 15B

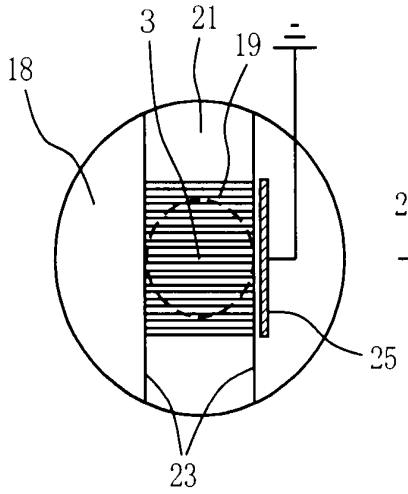

FIG. 15A

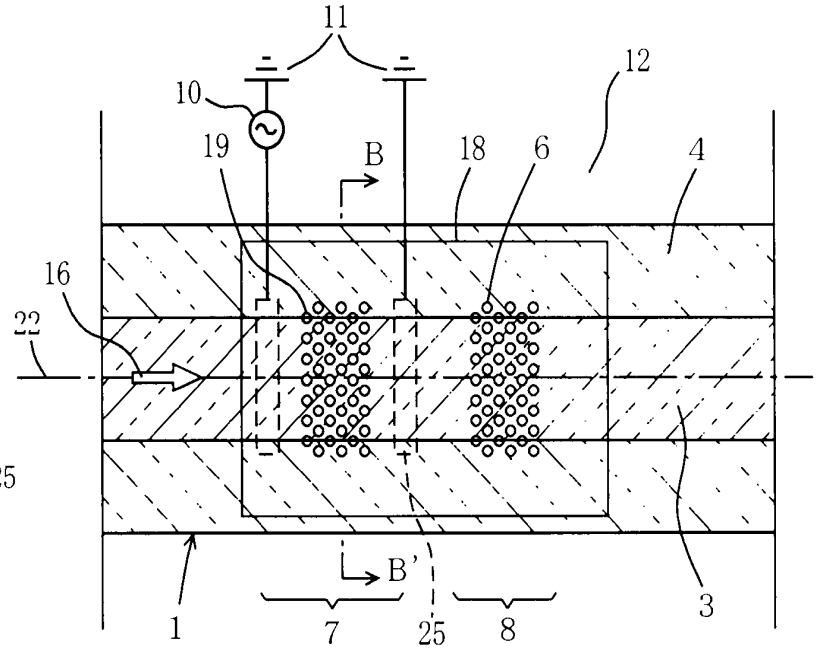

FIG. 16B

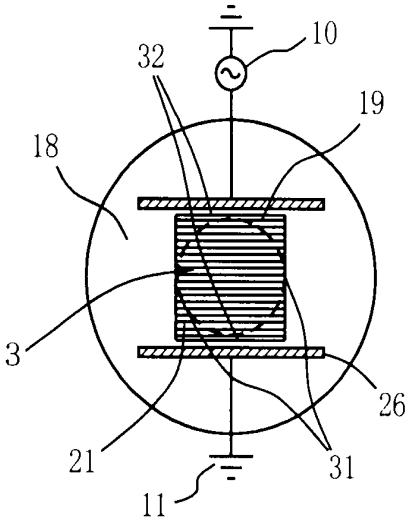

FIG. 16A

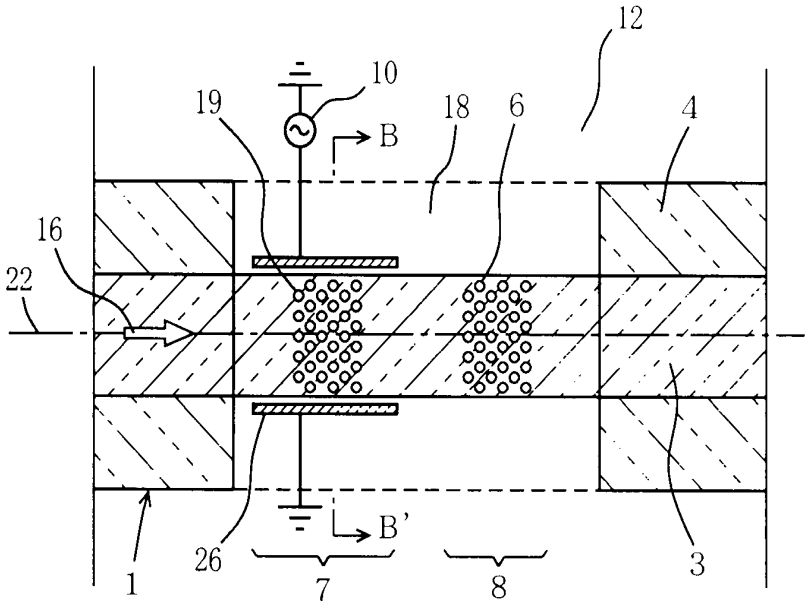

FIG. 17B

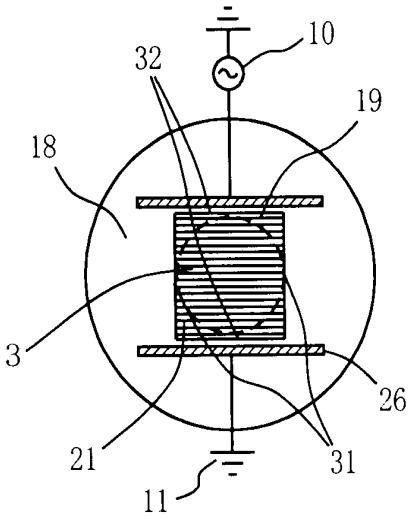

FIG. 17A

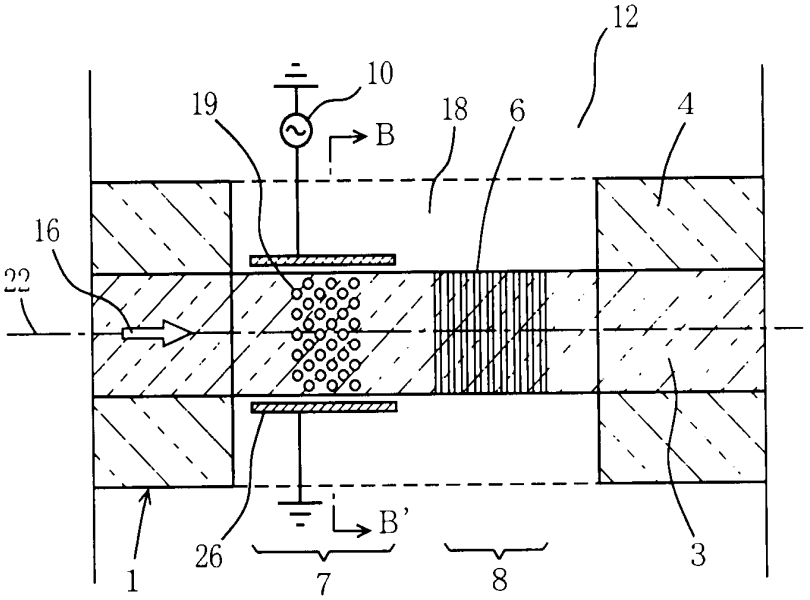

FIG. 18B

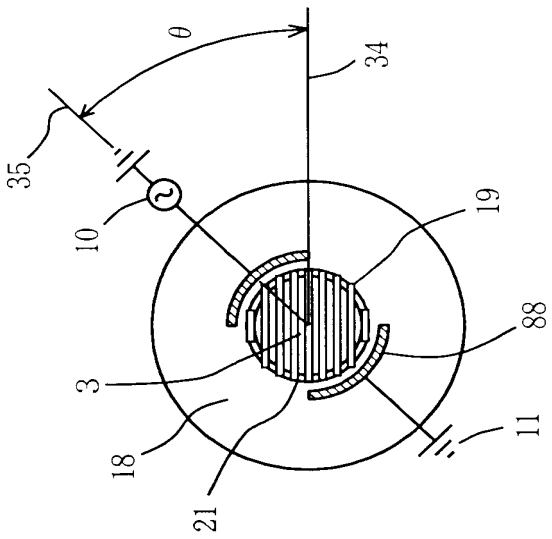

FIG. 18A

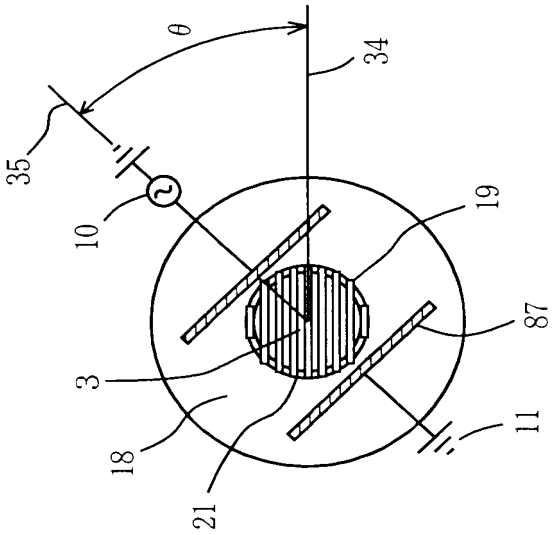

FIG. 19

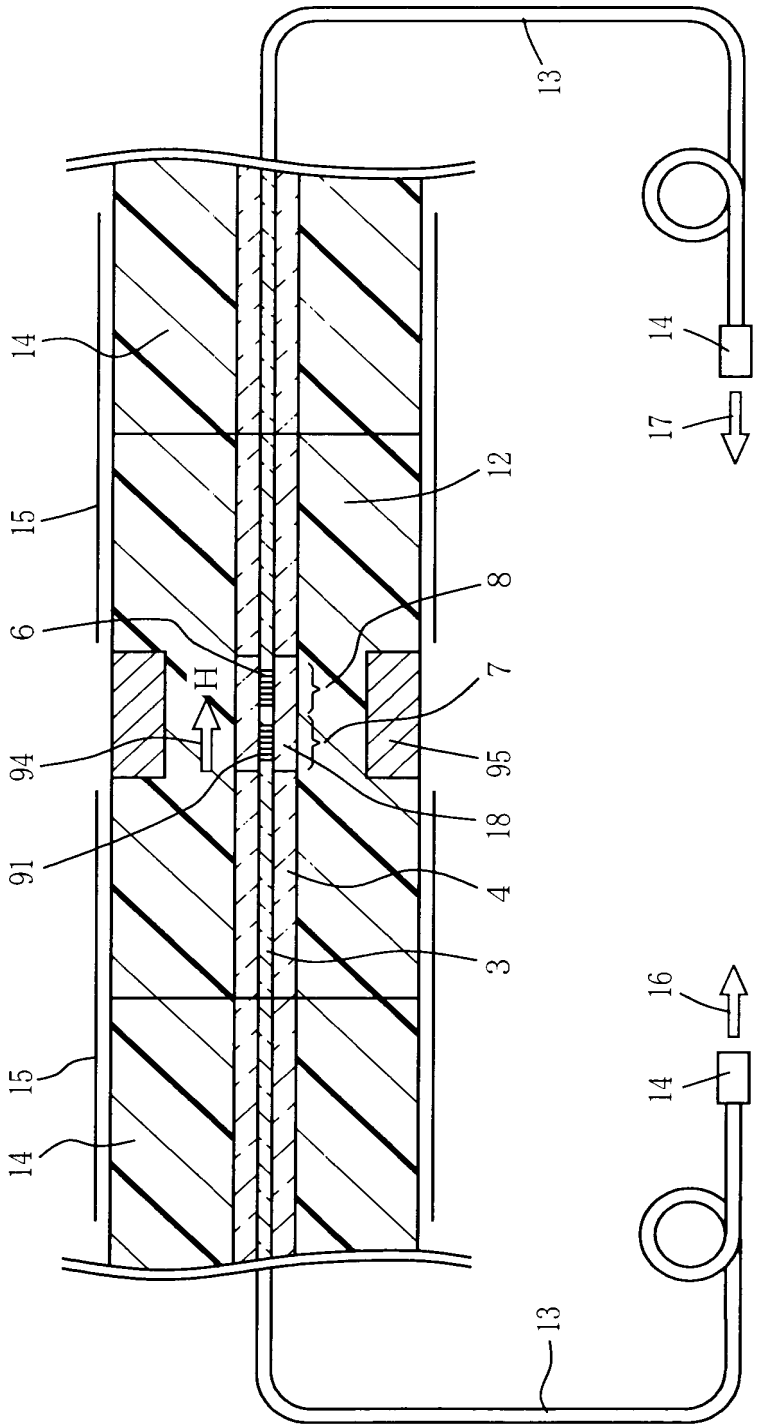

FIG. 20

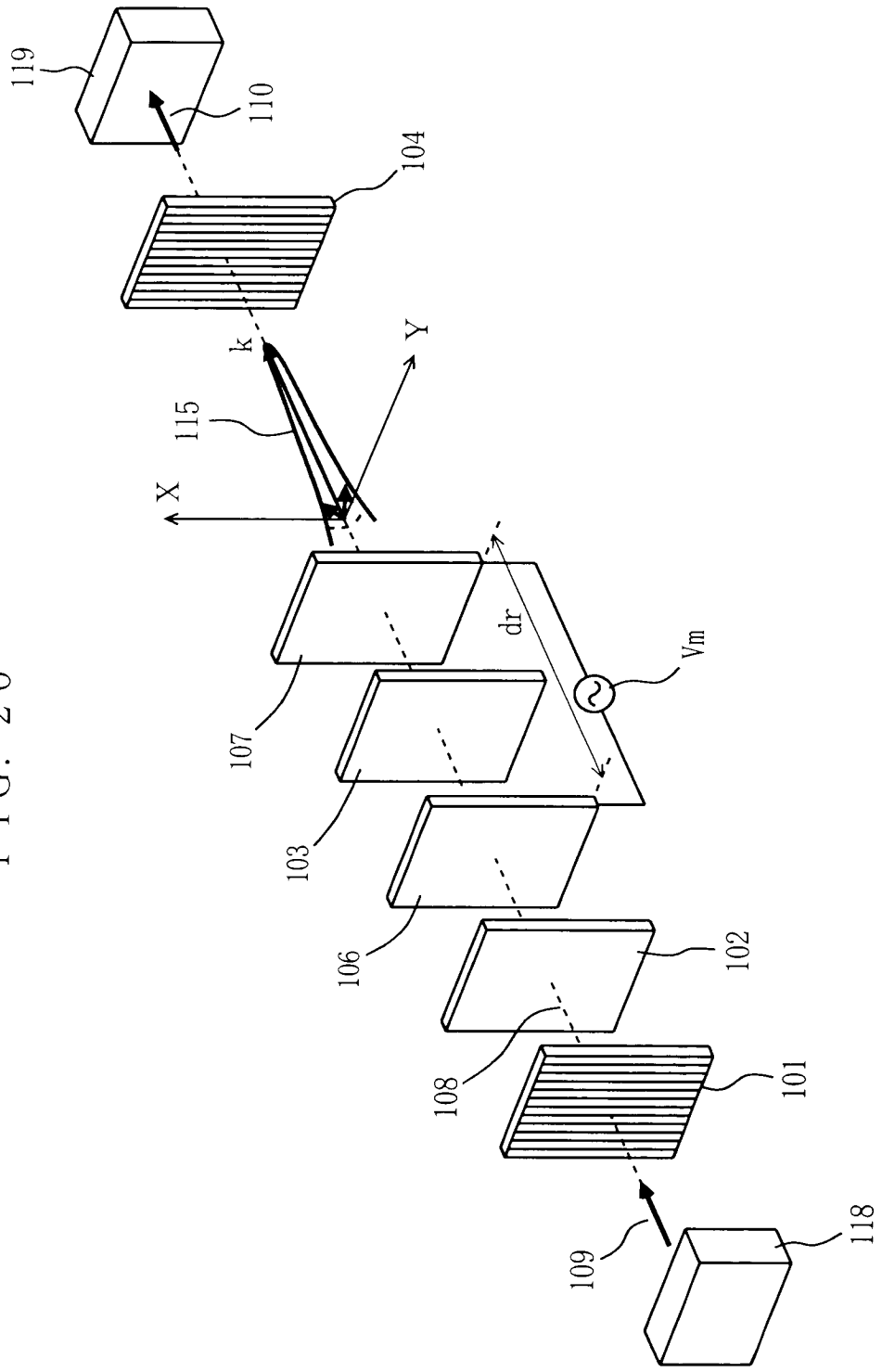

FIG. 21

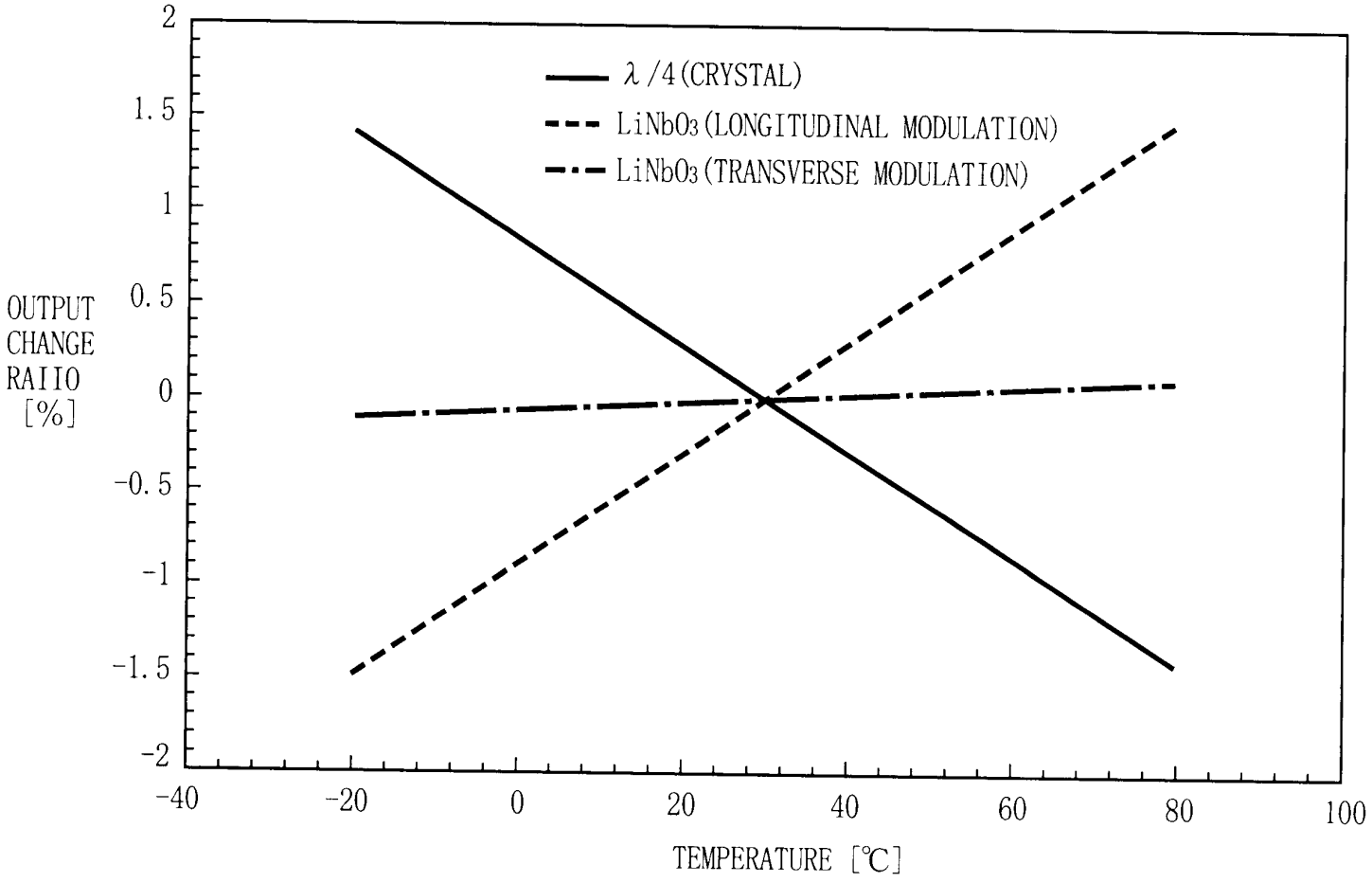
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
OUTPUT CHANGE RAIIO [%]
λ/4(CRYSTAL)
LiNbO3(LONGITUDINAL MODULATION)
LiNbO3(TRANSVERSE MODULATION)
-40
-20
0
20
40
60
80
100
TEMPERATURE [℃]

FIG. 22

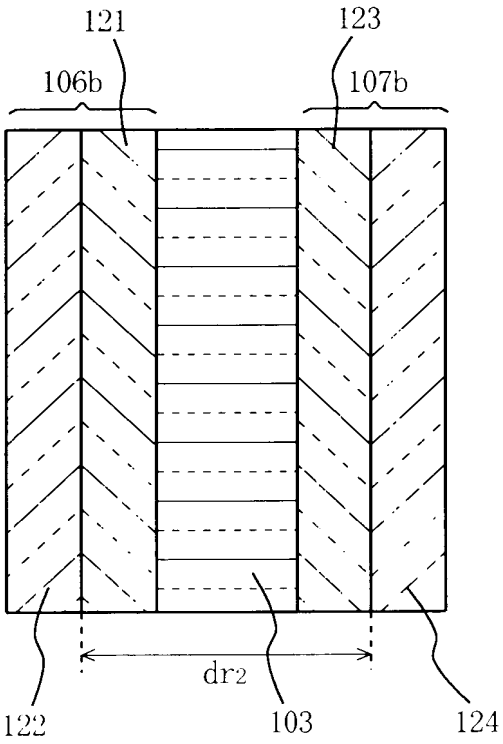

FIG. 23

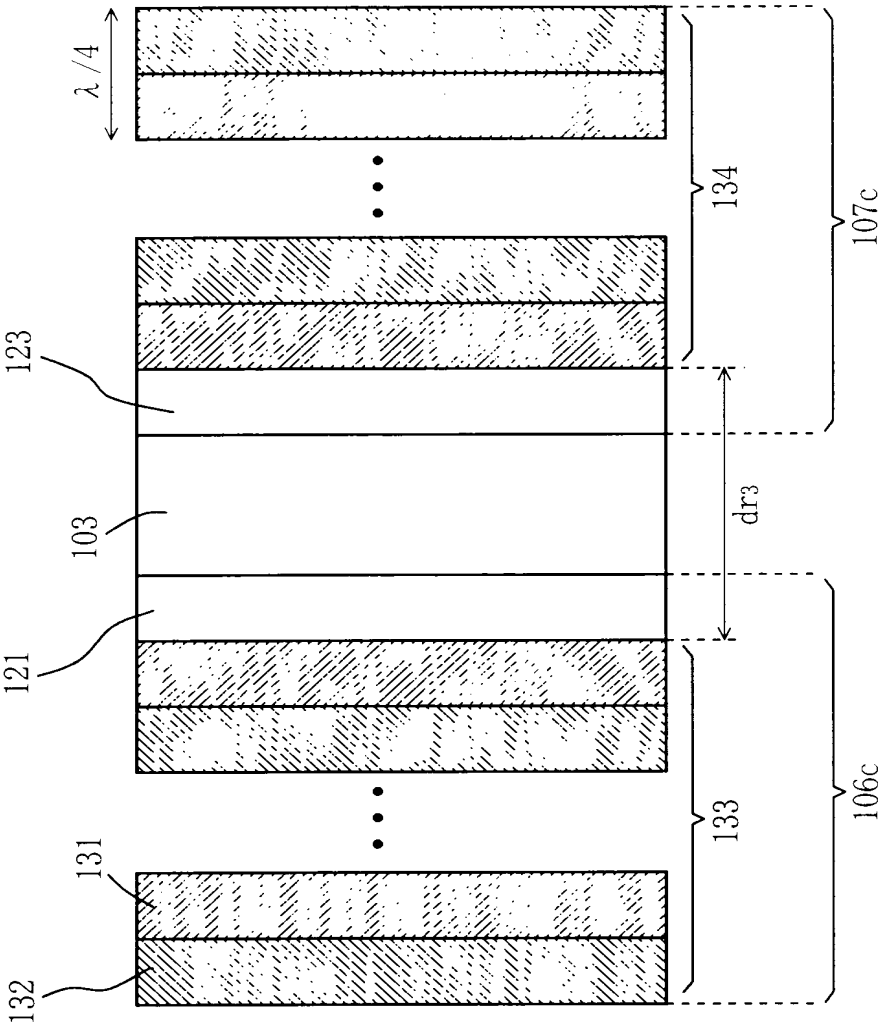

FIG. 24

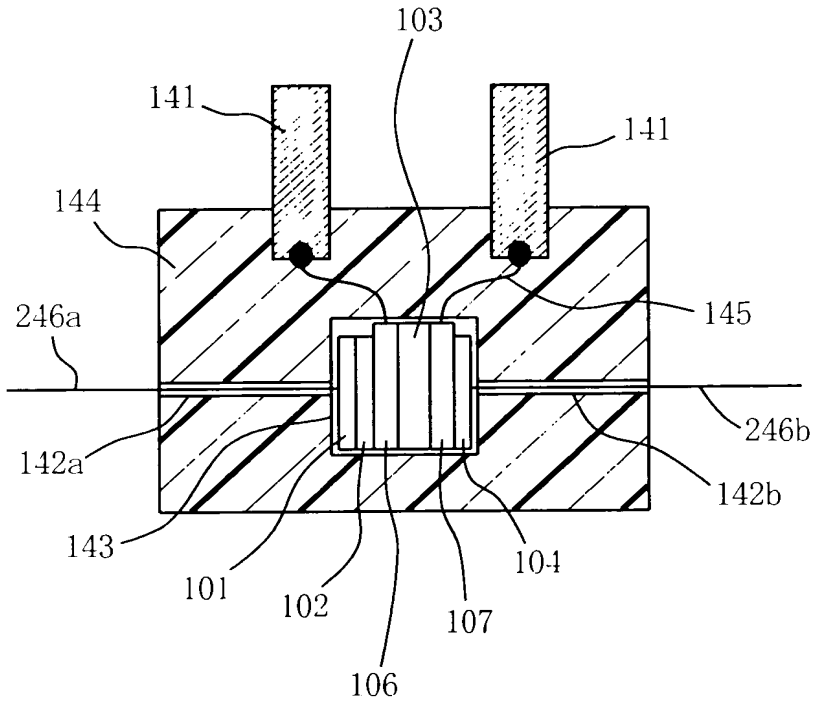
103
141
141
144
145
246a
246b
142a
142b
143
101
102
107
104
106

FIG. 25

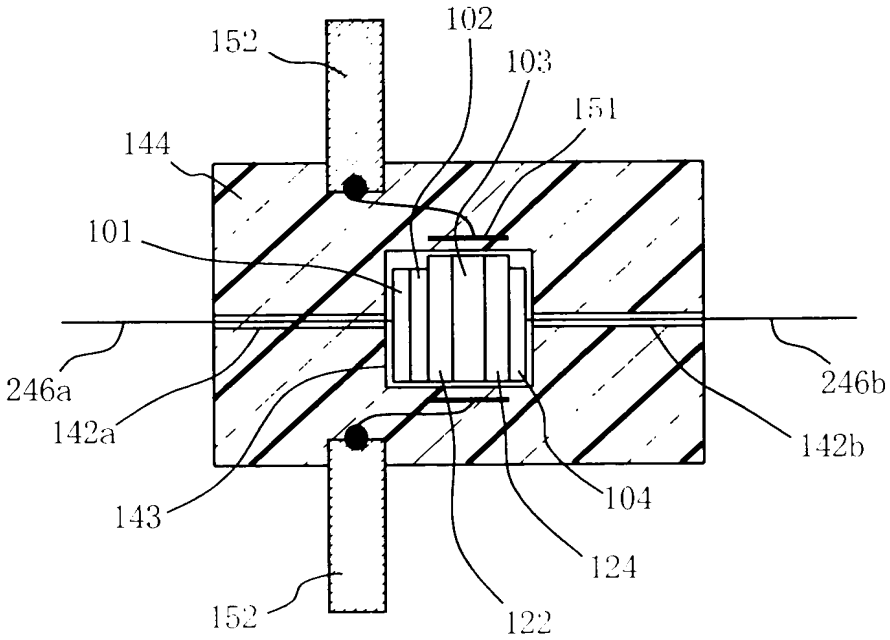
102
152
103
151
144
101
246a
246b
142a
142b
143
104
124
152
122

FIG. 26

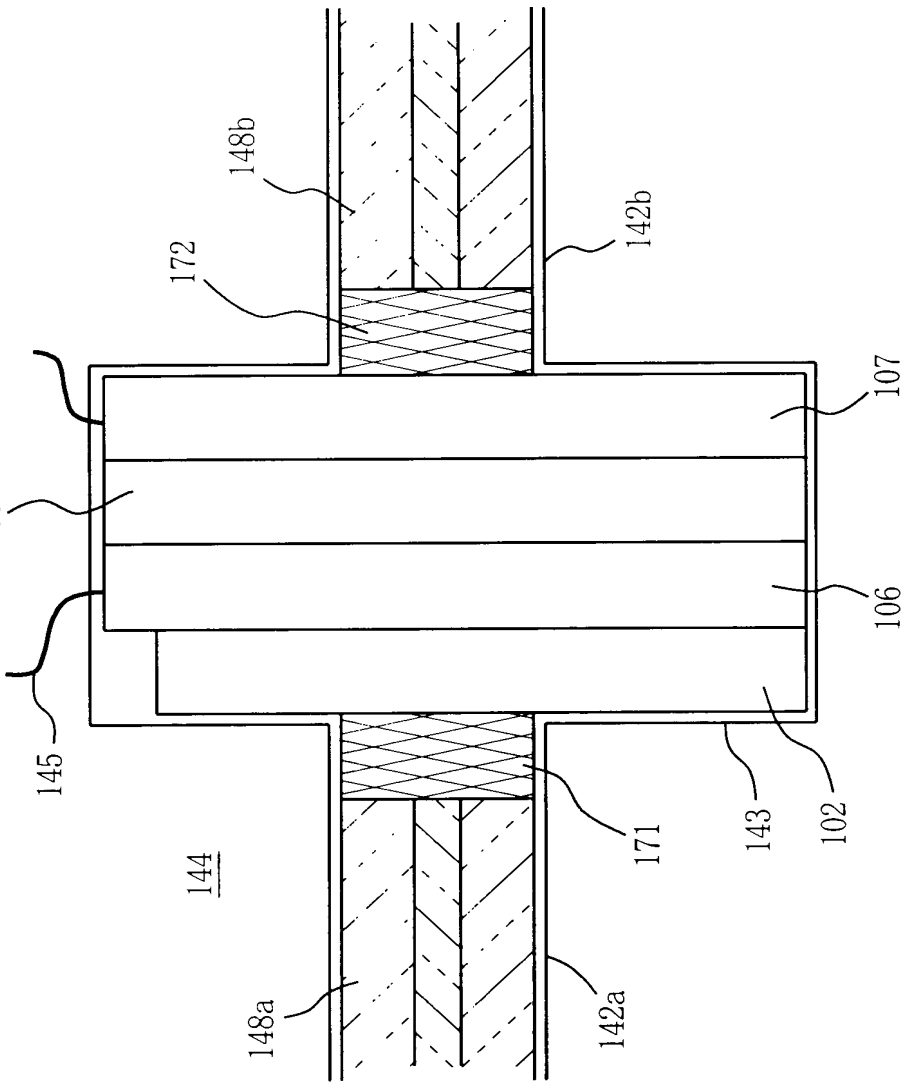

FIG. 27

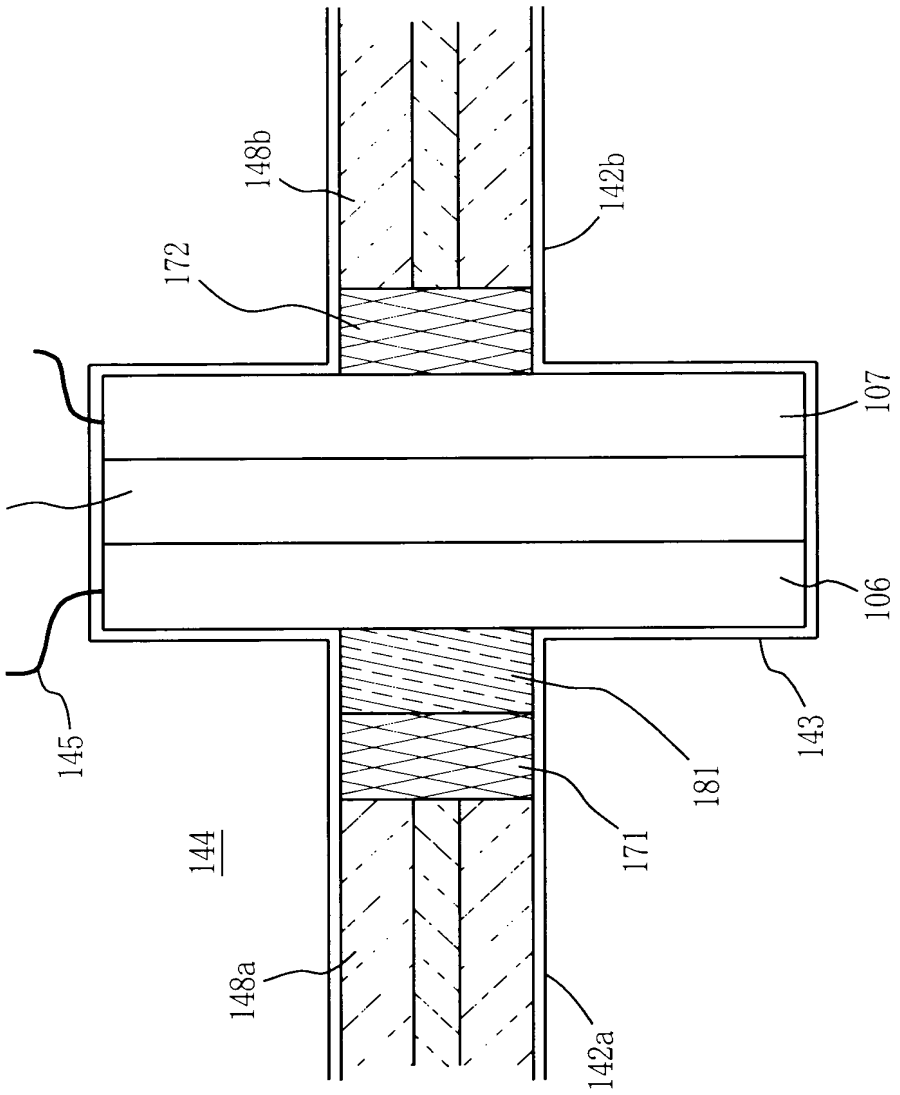

FIG. 28

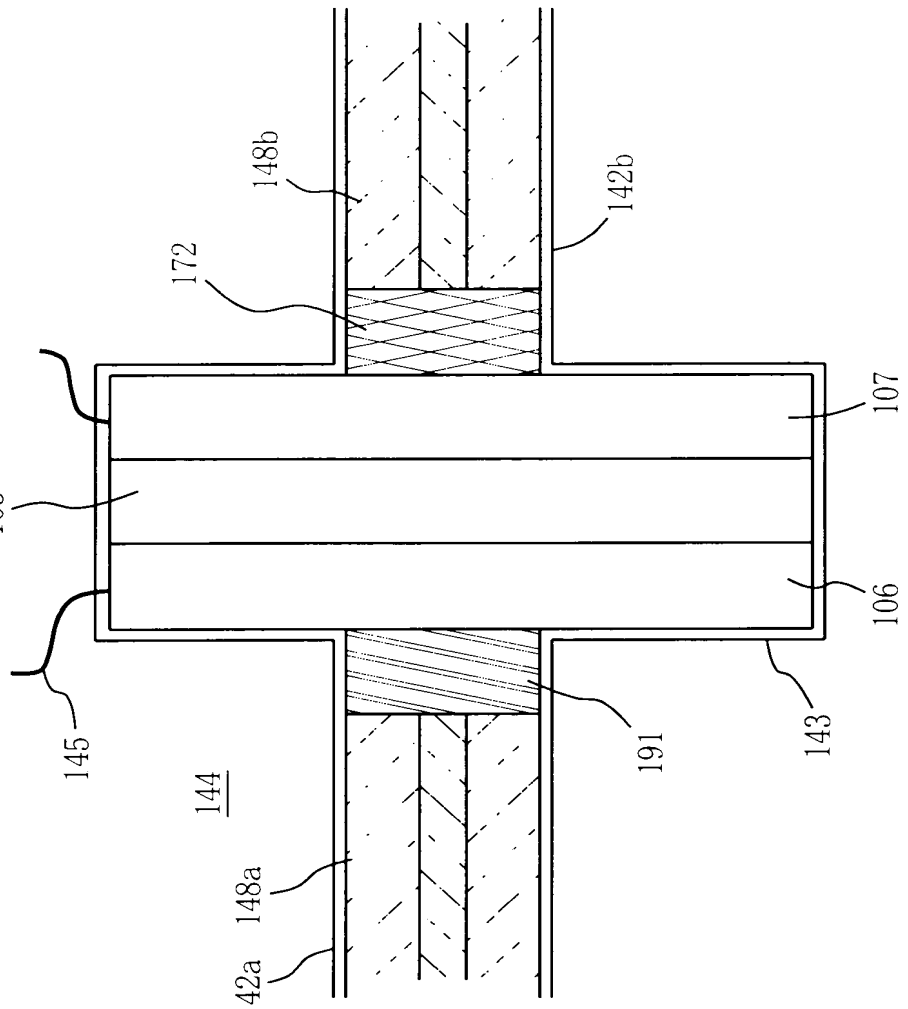

FIG. 29

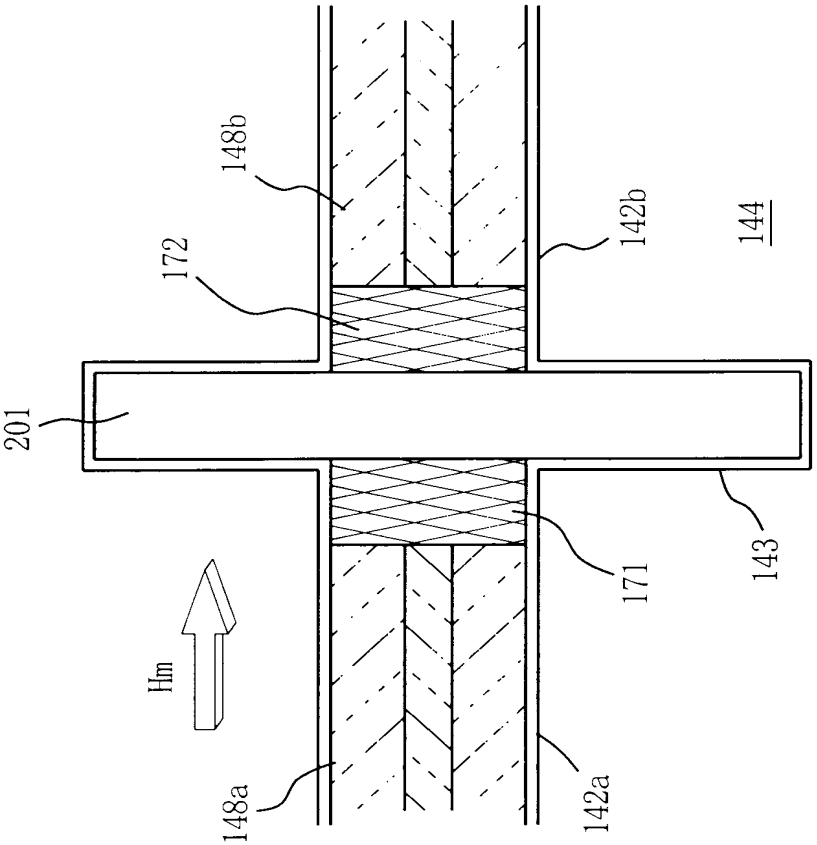

FIG. 30

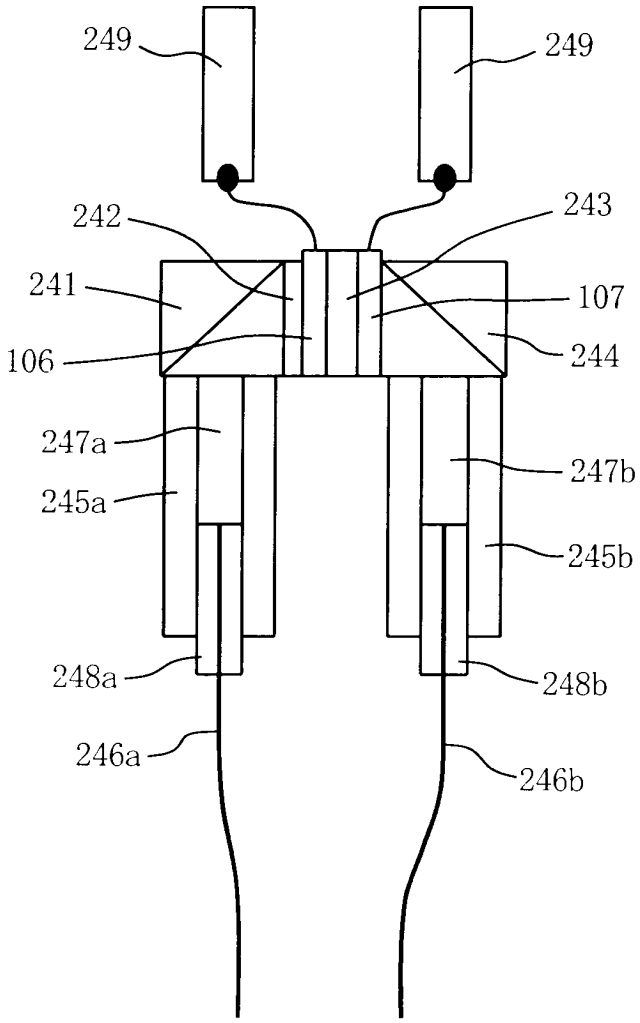
249
249
242
243
241
107
106
244
247a
247b
245a
245b
248a
248b
246a
246b

FIG. 31 PRIOR ART

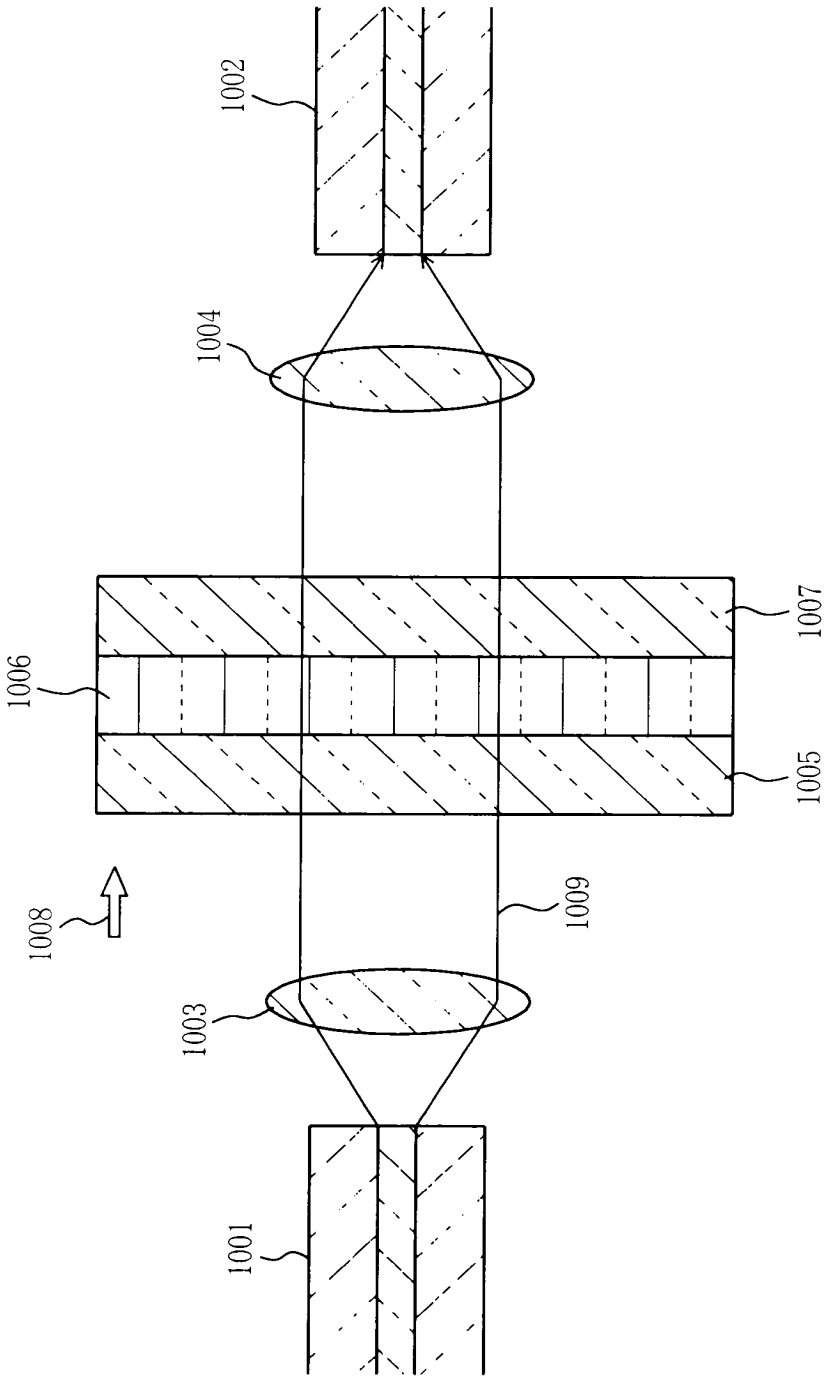

FIG. 32 PRIOR ART

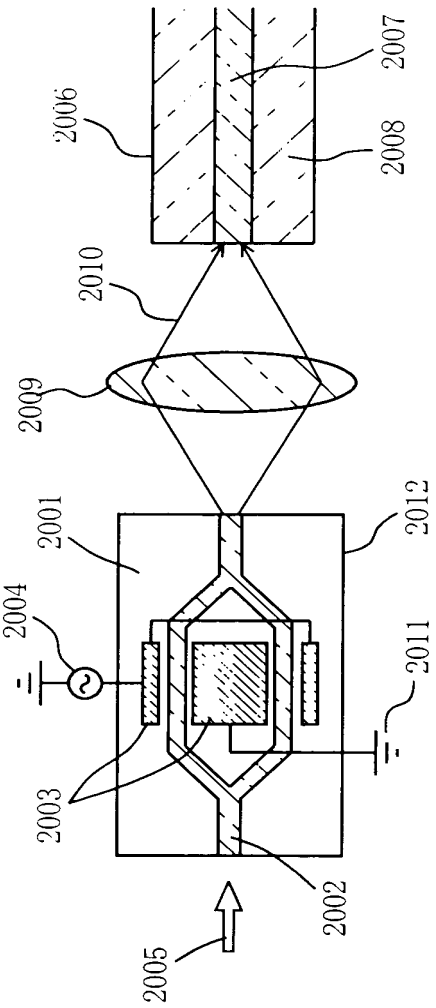

FIG. 33 PRIOR ART

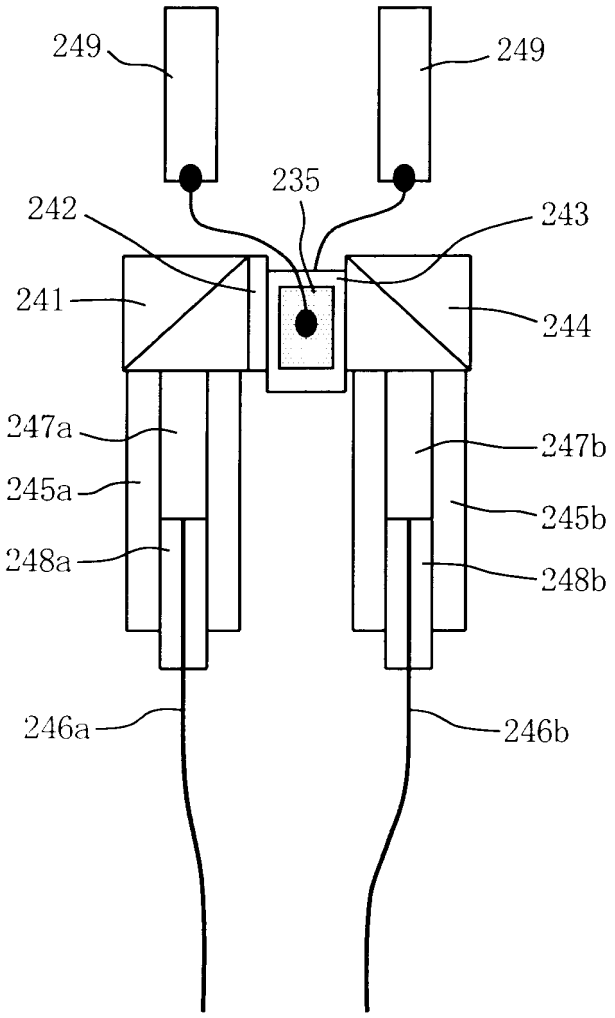

FIG. 34 PRIOR ART

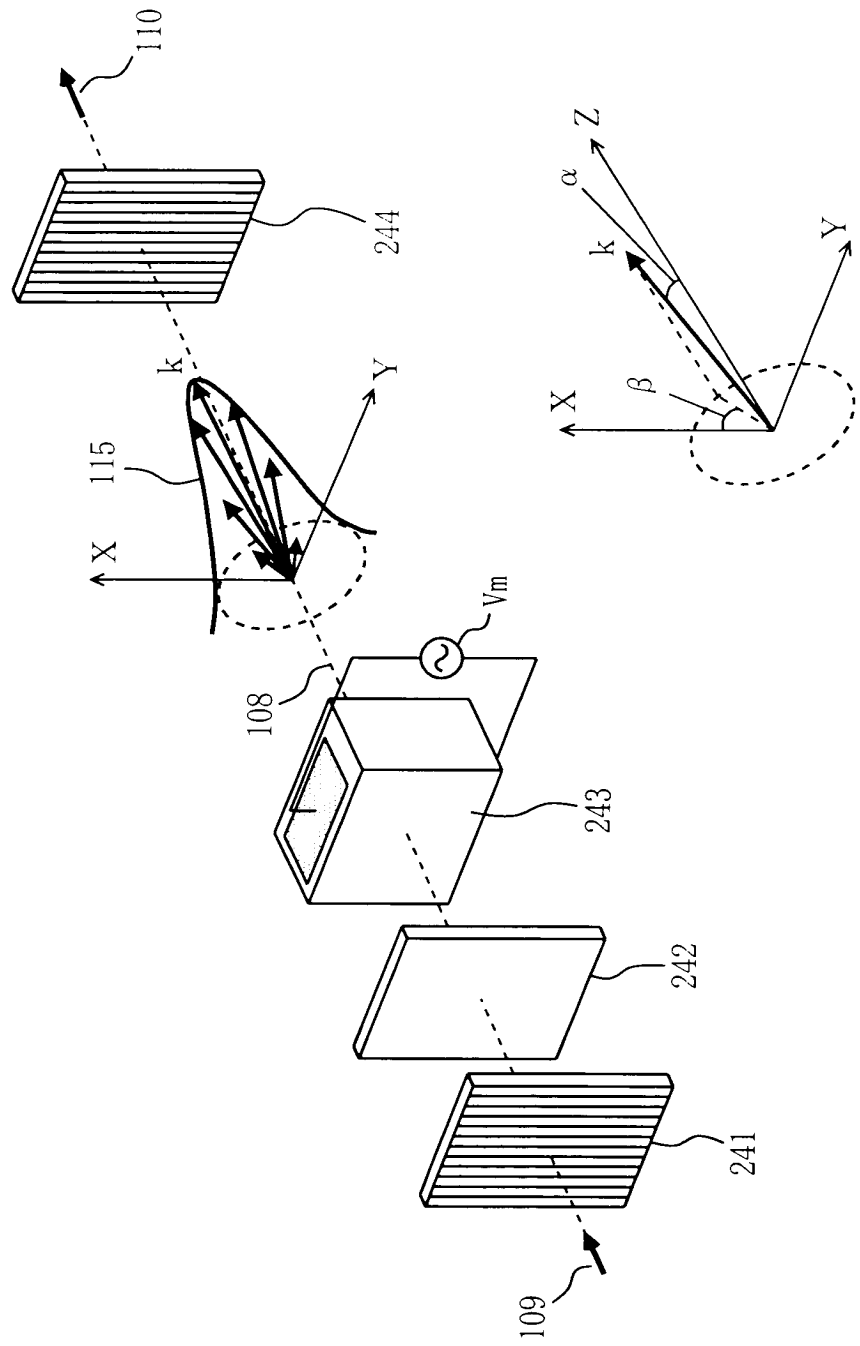

FIG. 35 PRIOR ART